

CALIFORNIA DIVISION OF MINES & GEOLOGY

FAULT EVALUATION REPORT (FER-2)

March 9, 1976

1. Name of fault: Concord fault (north end)
2. Location: Benicia, Solano County (see index map); Port Chicago quadrangle.
3. Reason for evaluation: Revision of Special Studies Zones requested by City of Benicia (letters of January 3 and June 12, 1975) and E.C. Winterhalder (of Harding-Lawson Associates, p.c. of 11/14/74).

4. List of references:

Harding-Lawson Associates, consulting reports of November 4, 1974 and February 11, 1976, Geologic evaluation, active fault risk, Benicia Industrial Park, Areas 5, 8 and 9, Solano County, California (for Benicia Industries, Inc.): CDMG open-file report AP-31.

Sharp, R.V., 1973, Map showing recent tectonic movement on the Concord fault, Contra Costa and Solano Counties, California: U.S. Geological Survey Miscellaneous Field Studies Map MF-505.

Sims, J.D., Fox, K.F., Jr., Bartow, J.A., and Helley, E.J., 1973, Preliminary geologic map of Solano County and parts of Napa, Contra Costa, Marin, and Yolo Counties, California: U.S. Geological Survey Miscellaneous Field Studies Map MF-484.

Cartwright aerial photos of 4/20/68, black and white, scale 1:6000, #2297-1 to -6. Also photos of 7/10/73, black and white, scale 1:12,000, #5594-1-189 to -193.

Harding-Lawson aerial photos #1 and 2 of 11/12/75, black and white, scale 1:30,000.

California Division of Mines and Geology, 1974, Special Studies Zones, Port Chigato quadrangle, Official Map, July 1, 1974.

## 5. Summary of available data

The CDMG Special Studies Zones map of the Port Chicago quad shows a SSZ delineated around the Concord fault in Benicia, Solano County (map attached). This zone is based on traces of recently active faults identified by Sharp (1973) and Sims, et al. (1973). Apparently the separate trace shown by Sims, et al. was intended to be the same as that of Sharp (Sims, oral communication, 11/13/74). Thus, the zone is wider on the northeast than it should have been.

Extensive investigations by Harding-Lawson Associates did not uncover any evidence to indicate the existence of a Holocene fault as shown by Sharp anywhere within the zone delineated by CDMG. Investigative methods included 1) review of the literature, 2) personal communications with both Sharp and Sims, 3) interpretation of 3 sets of aerial photographs, 4) on-site mapping and logging of road and other artificial cuts, 5) trenching, 6) test pits, and 7) accoustical profiling in Suisun Bay.

Other than the reported minor offset of the railroad tracks by Sharp, there is no evidence for recent faulting anywhere within the zoned area. Re-observation of the railroad tracks by E.C. Winterhalder (Harding-Lawson, 1976) did not reveal any detectable offset. Further, the railroad tracks to the southeast showed no offsets (Sharp, 1973). To the northwest, no faults were detected in several well-exposed artificial cuts in Late Quaternary strata.

The reports of Harding-Lawson Associates have been reviewed and the investigation and conclusion (no evidence of an active fault) are

considered to be adequate.

6. Interpretation of aerial photos: No evidence for recent faults (or any thru-going faults) in the Special Studies Zones were observed during an examination by Hart of the 3 sets of air photos referenced above. Fault evidence was specifically absent in the grassy hills that extend uninterrupted across the north end of the zone.
7. Field observations: On 3/3/75, Wagner and Hart observed all artificial cuts and the railroad where offset was reported by Sharp and we could observe no evidence of recent faulting. Also, there was no evidence of historic faulting in the paved highway adjacent to the railroad. Another brief field visit was made in late 1976, when an exploratory trench was being excavated by Harding-Lawson. Observations in the east half of the trench did not reveal any recent faulting in the strata.
8. Conclusions: Based on the reports of Harding-Lawson, on photo interpretations, on two field visits, and on review of the literature, the conclusion is reached that there is no evidence of Holocene faulting within the established Special Studies Zones at Benicia. The offset in the railroad tracks, reported by Sharp, could not be verified.
9. Recommendations: The evaluation did not reveal any evidence for an active fault within the established zone. Therefore, it is recommended that the existing zone be deleted, at least as far <sup>to</sup> ~~as~~ the southeast as the Solano-Contra Costa County boundary (see amended zone map, attached).
10. Investigating geologist and date:

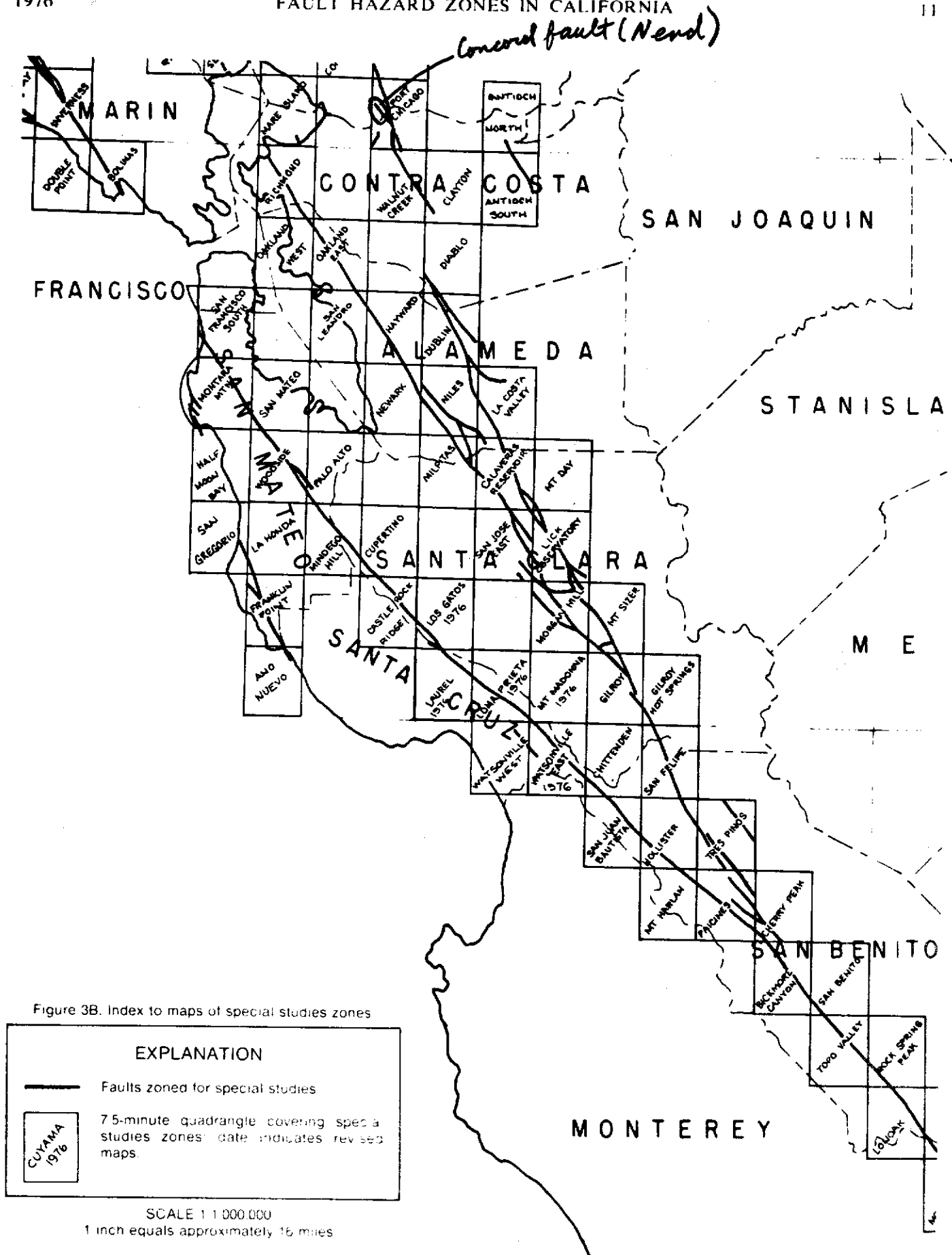
EARL W. HART, 3/9/76.

*Earl W. Hart*

1976

FAULT HAZARD ZONES IN CALIFORNIA

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Recommendations  
fault and  
zone deletions

Fault not based  
on literature;  
this is our  
projection.

